

*DVORETSKIY, I.V.*

PATKANOV, N.M.; YATSUN, N.F.; DVORETSKIY, I.V., inzhener; SOKOLOV, S.P.,  
inzhener

Determining the shape of shuttle tips for the picking mechanism of  
type-H automatic looms. Tekst.prom.15 no.8:30-32 Ag '55.  
(MLRA 8:11)

1. Glavnyy inzhener fabriki imeni Dzerzhinskogo Glavlenkhlopproma  
(for Patkanov) 2. Nachal'nik tkatskogo tsekha fabriki imeni Dzer-  
zhinskogo Glavlenkhlopproma (for Yatsun).  
(Pickers (Weaving))

DVORETSKIY, Igor' Vasil'yevich; LOKOT', Boris Stepanovich;  
KARASEV, V.K., red.

[Manufacture of rainwear from polyvinyl chloride films]  
Proizvodstvo plashchei iz polivinilkhlordnoi plenki.  
Leningrad, 1965. 21 p. (MIRA 18:7)



the surface of the diffuser neck. K<sub>1</sub> = the thermal conductivity of the ceramic

**"APPROVED FOR RELEASE: 08/25/2000**

**CIA-RDP86-00513R000411630004-2**

**APPROVED FOR RELEASE: 08/25/2000**

**CIA-RDP86-00513R000411630004-2"**

OKUN', Yevsey L'vovich; ZIZEMSKIY, Ye.I., retsenzent; LITVINOV, V.I.,  
retsenzent; NIKITINA, M.I., red.; DVORETSKIY, L.G., nauchnyy red.;  
KRYAKOVA, D.M., tekhn.red.  
[Calculation and design of radio transmitters] Raschet i pro-  
ektirovaniye radioperedatchikov. Leningrad, Sudpromgiz, 1962.  
414 p. (MIRA 15:11)  
(Radio--Transmitters and transmission)

DVORETSKIY, M. L., Doc Agr Sci, "CURRENT <sup>growth</sup> ~~ASSESSMENT~~ IN  
THE BULK OF A WOODY TRUNK AND THE <sup>reserves</sup> ~~SUPPLY~~ OF AVAILABLE  
STANDING TIMBER, AND METHODS OF ITS <sup>determination</sup> ~~COMPUTATION~~." LE-  
NINGRAD, 1960. (MIN OF HIGHER AND SEC SPEC ED RSFSR, LE-  
NINGRAD ORDER OF LENIN FORESTRY ENGINEERING ACAD IM S. M.  
KIROV). (KL, 2-61, 214).

-207-

KUDRYAVTSEV, Konstantin Aleksandrovich, dots.; DVORETSKIY, M.L.,  
red.

[Average values of taper and volume of round lumber] Ve-  
lichiny srednego sbega i ob'emov kruglykh lesomaterialov.  
Ioshkar-Ola, Povolzhskii lesotekhn. in-t im. M.Gor'kogo,  
1962. 20 p. (MIRA 17:7)

DVORETSKIY, Maksim Lavrovich

[Current wood increment of individual trees and stands]  
Tekushchii prirost drevesiny stvola i drevostoi. Mo-  
skva, Lesnaia promyshlennost', 1964. 1 v.

(MIRA 18:6)

DVORETSKIY, M.L., red.

[Materials of the Scientific and Technical Conference on Exchange of Experience in Increasing the Forest Productivity of the Volga-Vyatka Economic Region] Materialy nauchno-tekhnicheskoi konferentsii po obmenu opytom povysheniya proizvoditel'nosti lesov Volgo-Vyatskogo ekonomicheskogo raiona. Ioshkar-Ola, Mariiskoe knizhnoe izd-vo, 1964. 65 p. (MIRA 18:4)

1. Nauchno-tekhnicheskaya konferentsiya po obmenu opytom povysheniya proizvoditel'nosti lesov Volgo-Vyatskogo ekonomicheskogo rayona, Ioshkar-Ola, 1963.

1. DVORETSKIY, M..O.
2. USSR (600)
4. Trees
7. Circulation of nitrogen and ash constituents in a fir-grove; letter to the editor.  
Vest. Mosk. un. 7 No. 10, 1952
9. Monthly List of Russian Accessions, Library of Congress, March 1953, Uncl.

DVORETSKIY, N.A.

Retroperitoneal rupture of the duodenum, Nov.khir.arkh. no.6:103  
N-D '59. (MIRA 13:4)

1. Khirurgicheskoye otdeleniye (zavednyushchiy - N.A. Dvortskiy)  
mediko-sanitarnoy chasti shakhty Kondrat'yevka-Novaya goroda Gor-  
lovki. Adres avtora: Gorlovka (Stalinskoy obl.), Medsanchast'  
shakhty Kondrat'yevka.

(VISCERA--WOUNDS AND INJURIES)

ANDREYEVSKIY, V.M. ~~DVORETSKIY~~, T.A.

Effect of the conditioned reflex mechanism on changes in the  
agglutinin titer. Trudy ISGMI 45:56-60 '58 (MIRA 11:11)

1. Kafedra epidemiologii Leningradskogo sanitarno-gigiyenicheskogo  
meditsinskogo instituta (zav. kafedroy - prof. V.A. Bashenin).  
(AGGLUTININS)  
(CONDITIONED RESPONSE)

DVORETSKIY, V., inzh.

State farms use reeds in building. Sel'. stroi. 12 no.3:31 Nr '58.  
(Kurgan Province--Reed (Botany)) (MIRA 11:3)

DVORETSKIY, V.G.; NESTERENKO, N.G.; RUCHKIN, A.V.

Improvement of methods and combined geophysical investigations  
of the carbonate sediments of the Volga-Ural region. Geol. нефти  
i gaza 7 no.11:47-52 N°63. (MIRA 17:8)

1. Volgo-Ural'skiy filial Vsesoyuznogo nauchno-issledovatel'skogo  
instituta geofizicheskikh metodov truda.

DVORETSKIY, V. I.

Belt and sheet rolling from nonferrous metals and alloys; textbook Moskva, Glav. red  
lit-ry po tsvetnoi metallurgii, 1937. (Mic 53-176)

Microfilm TS-7

1. Sheet-metal work. 2. Nonferrous metals. 3. Alloys.

DVORETSKIY, V.L.

Cutting tannide losses in the boiling of solid extracts. Ubm. tekhn.  
opyt. [MLP] no.29:9-10 '57. (MIR' 13:1)  
(Tanning materials)

DVORETSKIY, V.L.

Rapid analysis of leather tanned by the vegetable and chrome-vegetable method. Obm. tekhn. opyt. [MLP] no.29:10-13 '57.

(MIRA 13:1)

(Tanning) (Leather)

DVORETSKIY, V. M. (IAT AN SSSR)

"A Scheme Based on the Principle Force Compensation."

report presented at the Scientific Seminar on Pneumo-Hydraulic Automation,  
28-29 May 1957, at the Inst. for Automation and Remote Control (IAT), Acad. Sci. USSR

Avtomika i Telemekhanika, 1957, Vol. 18, No. 12, pp. 1148-1150, (author  
SEMIKOVA, A. I.)

AUTHOR: Dvoretzkiy, V. M. (Moscow)

SOV/103-19-11-2/10

TITLE: Determination of the Outer Characteristics and Calculation of Parameters of a Hydraulic Compensation Regulating Unit  
(K voprosu opredeleniya vneshney kharakteristiki i rascheta parametrov gidravlichesкого reguliruyushchego bloka kompensatsionnogo tipa)

PERIODICAL: Avtomatika i telemekhanika, 1958, Vol 19, Nr 11, pp 1010-1015 (USSR)

ABSTRACT: As a result of experiments carried out in IAT AS USSR (Refs 1, 2) the difficulties of regulating low consumption were overcome. This made possible the creation of a hydraulic control unit of the compensation type, utilizing the throttling organs of the "nozzle-flap" (jet-valve) - type and of controllable throttle bundles. Here a diagram and the mode of operation of one of those hydraulic control units are given. The unit makes two types of control possible: static and isodromic control. The equation for the external pressure characteristic of the unit (11) is derived. It shows that the outlet pressure of the unit has a proportional and an integral component. Generally the latter is not a linear

Card 1/2

Determination of the Outer Characteristics and  
Calculation of Parameters of a Hydraulic Compensation  
Regulating Unit

SOV/103-19-11-2/10

function of the entry signal. The control characteristics are determined, and the dependence of the phasing of the unit (of the throttling range and isodrome time) upon the place of the phasing organs are chosen as such characteristics. The formulae here obtained for the control characteristics of the unit may be used for calculating the main characteristics of throttling organs which correspond to those of the unit. There are 7 figures and 2 Soviet references.

SUBMITTED: December 24, 1957

Card 2/2

DVORETSKIY, V.M.

28(1)	PHASE I BOOK EXPLOITATION	SOV/2702
	Akademiya nauk SSSR. Institut avtomatiki i telemekhaniki. Seminar po pnevmogidravlicheskoy avtomatike. Ist. Moscow, 1957	
	Sistemy, ustroystva i elementy pnevmoo- i gidravlicheskoy avtomatiki. (Pneumatic and Hydraulic Circuits, Devices, and Elements in Automation. [Collection of Papers]. Moscow, Izd-vo AN SSSR, 1959. 233 p. Errata slip inserted. 2,700 copies printed.	
	Resp. Ed.: M. A. Ayeraman, Doctor of Technical Sciences, Professor; Ed. of Publishing House: A. A. Tal; Tech. Ed.: E. P. Polyakova.	
	PURPOSE: This collection of papers is intended for scientific research workers and engineers in the field of design and construction of pneumatic and hydraulic equipment and accessories for automation.	
	COVERAGE: This collection contains papers read at the Seminar on Pneumatic and Hydraulic Devices for Automation, May 28, 1957. The collection is divided into the following three groups: 1) Newly developed pneumatic and hydraulic circuits; 2) Pneumatic and hydraulic devices, including regulating valves, transmitters and transducers, actuating mechanisms, special-purpose devices, and auxiliary equipment; and 3) Elements of pneumatic and hydraulic devices for automation, such as controlled and permanent nozzles and diaphragms. No particularities are mentioned. References follow several of the papers.	
	Podgotovitskiy, M. L., and E. N. Braverman [Moscow]. KSRMA Three-Component Regulating Unit 50	
	Dvoretskiy, V.M. [Moscow]. Small-size Hydraulic Regulating Unit, IAT AN SSSR 57	
	Zasodatel, J.N., and V.A. Bukharin [Moscow]. Problems in Constructing Primary Instruments -- Differential Pressure Transmitter With Pneumatic Force Compensation 61	
	This paper is a theoretical discussion of differential transmitters dealing with their sensitivity, errors, and reliability.	
	Kryzhaninov, Ya. V. [Moscow]. Electropneumatic Transducers, IAT AN SSSR 77	
	Deitriyev, V.M. [Moscow]. Static Characteristics of a Pneumatic Relay With Constant Pressure Drop in Nozzles 86	
	This paper discusses the static characteristics of a back-pressure type pneumatic relay with indicators that are not sensitive to minute gap changes.	
	Zasodatel, J.N., and V.A. Bukharin [Moscow]. Differential Pressure Transmitters With Pneumatic Force Compensation (Review of Non-Soviet Designs) 91	
	Tamov, V. P. [Moscow]. General-purpose Hydraulic Power Servo-drive 99	
	Arhangelskiy, A. P. Hydraulic Universal Variable-speed Transmission (Review) 103	
	This paper describes an axial-piston variable-speed transmission. It also presents technical specifications and fields of application are discussed.	
	Babushkin, S. A. [Leningrad]. Equations for a Stabilizing System With a Hydraulic Actuator Connected With a Control Device by Hydraulic Main Lines 112	
	Equations of the motion of the actuator piston and elements of the control device are given. Design examples are presented.	

DVORETSKIY, V.M.

PLEASE I DOCK MY ZONE/ECOM 804/4672

Abdominal pain SIB. Intestine normal. 1 colonoscopy. Good for  
justing. The all the way around. Ad and 3d session

Voprosy pozitsii i kul'turno-sotsializma (Problems in Parametric and Hydraulic Automation)  
Moscow, 1960. 221 p. Krita sliu izdatel'stva 2,500 copies printed.

Prof. Ed.: M.A. Arzamas, Doctor of Technical Sciences, Professor; Ed. of Publishing House: A.A. Pavlov; Tech. Ed.: S.D. Khokhlov.

**PURPOSE:** This collection of articles is intended for scientific workers, industrial designers and engineers interested in automation and telemechanics.

Abstract. The collection of 23 articles is a continuation of an earlier work of the Academy of Sciences, USSR, on pneumatic and hydraulic automation system. Published in 1959, a wide range of problems connected with the design and operation of pneumatic and hydraulic automation equipment is described. An additional problem based on experiments, the collection also contains theoretical articles on the field, such as the possibilities of pneumatic control of the operation of pneumatic equipment and the possibilities of pneumatic control in the operation of pneumatic equipment and in electrohydraulic and in electrohydraulic systems. The articles are arranged in a systematic manner, and the collection is a valuable source of information for the design and operation of pneumatic equipment. The collection is a valuable source of information for the design and operation of pneumatic equipment. The collection is a valuable source of information for the design and operation of pneumatic equipment.

# HYDRAULIC AND ELECTRIC DEVICES AND SYSTEMS OF AUTOMATIC REGULATION

Weygel'son, L.L. Pneumatic Compressing Pressure and Rarefaction Trans-  
mitters and the Transmission of Pressure

AUSA, R.A., and L.O. Ruffolo, Jr. Dynamic Characteristics of AIB  
(Aerobically Utilized Biomass Systems). Drafting Assembly Systems)  
Regulations and Recommendations for Their Tuning

Voids, T.V., Direct and Reverse Load in Automatic Regulation Systems  
Composed of Air Permeable Instruments

DIAMETER, 4 IN. SMALL SCALE HYDRAULIC LOAD BLOCK OF COMPENSATION TYPE

### **Summary, V.2. Method of Increasing the Amplitude of Industrial Hydraulic Test Presses**

**Митронов, В.С.** **НН-1** Электроде и гидравлический регулятор

### III. Education Plan: Electronics and Powerline Regulator

**Refraction Is the Petroleum Refining Industry**

PROBABLE CONSTRUCTION AND RESEARCH PROGRAM

Yellner, Jr., and E.H. Redinger. Construction Problems of Portable

**Computing Saving Devices**

**Leitch, W.D., Small Scale Parametric Continuous Action Calculating Machine**

and the Delay Block

Kalmanoff, T.A., and A.T. Sealmore. Investigation of Characteristics of

**Thermally Stable Polymers Used as Standards**

**Ingervalk, A.A. Device for the Application of Pneumatic External Regulation on Items With Several Regulating Components . . . . . 15**

Asst. Sec. of War, and U.S. Marine Corps. Engr. Regulating  
Construction with a Mechanical Office

Deble, T.I., M.L. Emsworn and T.G. Osterweil. Application of an Animal Respirometer for Controlling and Measuring Certain Chemical

# Processes According to the Thermal Effect of the Reaction

## HYDRAULIC AND PNEUMATIC AUTOMATION DEVICES

AN  
THE DEMOCRATIC FRONT AND CROATIA

### Components of Automatic Regulators

### Hydraulic Regulators of the Rifle Plant

AC/asm/gp  
2-12-6

The report deals with the thermodynamic control relay for modern noncontact automatic control and telemetric systems. Such systems could be made more economical and efficient if they were equipped with low-cost reliable components built of ferrite cores and semiconductor diodes. The use of these components improves the performance of the relay. The author describes the construction and operating principles of a relay built from these components. The author describes the structure, design, and construction of the relay and presents the results of its operation. The results of tests of some sample types of relays, and diagrams that the results of their operation are satisfactory, there are no references.

13,2000

30487  
S/194/61/000/008/017/092  
D201/D304

AUTHOR: Dvoretskiy, V.M.

TITLE: Compensation-type hydraulic precession unit of small dimensions

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 8, 1961, 14, abstract 8 V122 (V sb. Vopr. pnevmo-i gidroavtomatiki, M., AN SSSR, 1960, 88-92)

TEXT: The description of the circuit and principles of operation are given of a hydraulic precession unit, designed to introduce the first derivative stabilization into control systems utilizing hydraulic arrangements. The unit operates on the principle of compensation of forces. The first derivative effect is obtained from the delayed output pressure feedback. The negative feedback circuit has an RC - hydraulic network, consisting of a series connected throttle and a variable space in the shape of bellows compressed by a spring. The throttle consists of a controlled bank of

Card 1/2

Compensation-type hydraulic...

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S/194/61/000/008/017/092  
D201/D304

throttles, whose hydraulic resistance depends on the number of diaphragms with calibrated holes connected in series into the conduit at the input of the bellows. The use of the throttle bank permits changing the time constant of the cell within 0.6 to 9 min. Two variants of the unit are given having 2- and 3-membrane adders of the input pressure and that of the feedback. Certain results of experimental investigations are discussed. 3 figures. 2 references. ✓

[Abstracter's note: Complete translation]

Card 2/2

168000 1068 1089

27357  
S/194/01/000/003/015/046  
D201/D306

AUTHOR: Dvoretskiy, V.M.

TITLE: Arrangement for obtaining small stable consumption of liquids by means of controlled drop of pressure at a fixed throttle

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 3, 1961, 16, abstract 3 V144 (V sb. Avtomat. upravleniye, M., AN SSSR, 1960, 195-200)

TEXT: A new method of obtaining small quantities of consumed liquids in automatic hydraulic systems is proposed. The liquid pressure is brought to a fixed throttle with a large working cross-section and to a pressure separator consisting of two series connected variable large gauge throttles. The pressure in the intermediate chamber of the separator is reproduced by a follow-up system, consisting of an elastic membrane and a nozzle at the output of the fixed throttle. The pressure drop at this throttle depends on the

Card 1/2

Arrangement for obtaining...

27357  
S/194/61/000/003/015/046  
D201/D306

ratio of the hydraulic resistances of the pressure separator. By varying the adjustment of the separator it is possible to vary the pressure drop at the constant throttle and consequently the quantity of liquid delivered. The basic hydraulic losses of the pressure applied to the mechanism occur at the gap between the nozzle and the membrane of the follow-up system. Some obliteration must occur within this gap, but, due to pressure feed-back in the follow-up system, the obliteration film is destroyed. (To remove the obliteration it is enough to move by a few microns the membrane with respect to the nozzle). The arrangement may be used as a controlled measuring hopper or as an adjustable resistance of an isodrome

[Abstracter's note: The measuring of the "isodrome" is not clear] in hydraulic compensating regulators. The analytical derivation of the mechanism characteristics is given together with experimental results. 4 figures. 3 references. [Abstracter's note: Complete translation]

Card 2/2

AVEN, O.A.; DVORETSKIY, V.M.; DOMANITSKIY, S.M.; ZALMANZON, L.A.;  
KRASSOV, I.M.; KRUG, Ye.K.; TAL', A.A.; KHOKHLOV, V.A.;  
BULGAKOV, A.A.; DEMIDENKO, Ye.D.; BERNSHTEYN, S.I.; YEMEL'YANOV,  
S.V.; LERNER, A.Ya.; MEYEROV, M.V.; PEREL'MAN, I.I.; FITSNER,  
L.N.; CHELYUSTKIN, A.B.; ZHOZHIKASHVILI, V.A.; IL'IN, V.A.;  
AGEYKIN, D.I.; GUSHCHIN, Yu.V.; KATYS, G.P.; MEL'TTSER, L.V.;  
PARKHOMENKO, P.P.; MIKHAYLOV, N.N.; FITSNER, L.N.; PARKHOMENKO,  
P.P.; ROZENBLAT, M.A.; SOTSKOV, B.S.; VASIL'YEVA, N.P.; PRANGISHVILI,  
I.V.; POLONNIKOV, D.Ye.; VOROB'YEVA, T.M.; DEKABRUN, I.Ye.

Work on the development of systems and principles of automatic  
control at the Institute of Automatic and Remote Control  
during 1939-1964. Avtom. i telem. 25 no. 6:807-851 Je '64.  
(MIRA 17:7)

L 07885-67 ENT(d)/EWT(m)/EWP(k)/EWP(h)/EWP(l)/EWP(v) DJ/GD

ACC NR: AT6021730

(A)

SOURCE CODE: UR/0000/66/000/000/0081/0088

AUTHOR: Dvoretzkiy, V. M.; Molchanov, G. G.; Temnyy, V. P.; Titov, S. M.

ORG: none

TITLE: System of elements for automatic hydraulic control

SOURCE: AN SSSR. Institut avtomatiki i telemekhaniki. Pnevmoavtomatika (Pneumatic automation). Moscow, Izd-vo Nauka, 1966, 81-88

TOPIC TAGS: automatic control system, hydraulic device, hydraulic engineering, hydraulic equipment, hydraulic logic device, hydraulic pressure amplifier, hydraulic resistance, hydraulics

ABSTRACT: Modules comprising a hydraulic control system are described. The operational amplifier consists of a resistance-membrane summation amplifier and a power amplifier. The operational amplifier, shown in figure 1, operates as follows: The elastic membranes 2 and 3 in the body of the summation amplifier 1 are connected by rod 4. Supply pressure  $P_g$  enters through choke (resistance) 8 into first amplification stage I, and simultaneously through channel 16 into pressure nozzle 12 of second amplification stage II. The input pressure is fed through chokes 5 into amplifier I, causing an average pressure of the inputs to be generated in the membrane chamber. The pressure difference forces the membrane to move flap 6 with respect to nozzle 7. The size

Card 1/3

L 07885-67

ACC NR: AT6021730

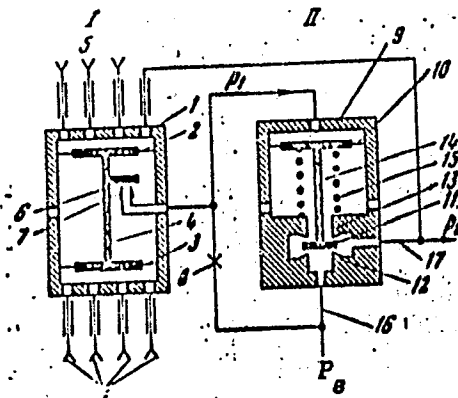


Fig. 1.

of the valve opening establishes a certain value of pressure within the middle chamber of amplifier I. This pressure serves as input  $P_1$  to second stage II. The displacement of the membrane 10 is transferred to valve gate 11 through rod 14. The membrane is preloaded by spring 15. Valve chamber 12 and 13 is connected to output channel 17 and valve 13

leads to the pressure sink. The output pressure is determined by the position of valve gate 11. The hydraulic differentiator is constructed using two operational amplifiers, an inertial element, and chokes (resistances). The first operational amplifier with the inertial element works as a repeater of the lagging signal and is connected to one of the chambers of the second amplifier which operates as a summation unit. The in-

L 07885-67

ACC NR: AT6021730

put pressure is fed into the choke of the inertial element; the pressure difference across this choke serves as the input to the second amplifier. The transfer function of the differentiator is

$$W(p) = \frac{kT_p}{T_p + 1}.$$

The hydraulic integrator is very similar to the differentiator except that the inertial element and the corresponding choke are contained in the feedback loop. The hydraulic capacitor is a single outlet chamber which can have either a flexible membrane or a spring-loaded bellows such that the internal volume changes with respect to the input pressure. The hydraulic chokes can either be of the laminar or turbulent flow type. The former is usually in the form of a tube with a small bore. An electro-hydraulic converter was designed for the performance analysis of the hydraulic modules. It is based on displacement measurement of a membrane by means of a linear differential transformer. The bandwidth of this instrument is 0.1 to 100 cps. Each of the described modules is shown by a block diagram and fairly extensive performance data are included. Orig. art. has: 10 figures.

SUB CODE: 13,14/

SUBM DATE: 03Feb66/

ORIG REF: 005

Card 3/3 *ad*

ACC NR: AP7004782

SOURCE CODE: UR/0413/67/000/001/0095/0095

INVENTOR: Dvoretzkiy, V.M.; Titov, S.M.

ORG: none

TITLE: Hydraulic relay. Class 42, No. 190008

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 1, 1967, 95

TOPIC TAGS: hydraulic device, hydraulic logical device

ABSTRACT: An Author Certificate has been issued for a hydraulic relay for logical and relay control circuits (see Fig. 1). To increase reliability and

Card 1/2

UDC: 681.142.07-525:621.318.562.5

ACC NR: AP7004782

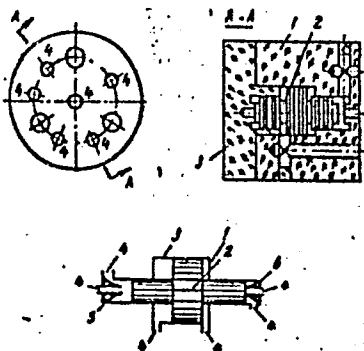


Fig. 1. Hydraulic relay

1 - Valve body; 2 - piston valve;  
3 - cap; 4 - channels; 5 - inlet  
nozzle; 6 - exhaust nozzle.

simplify construction, a differential-type piston valve is used, and inlet and exhaust nozzles are directed toward the small-end faces of the piston valve. Orig. art. has: 1 figure. [WF]

SUB CODE: 13/ SUBM DATE: 14Sep65/ ATD PRESS: 5115

Card 2/2

ACCESSION NR: AP4037608

S/0056/64/046/005/1901/1903

AUTHORS: Bednyakov, A. A.; Dvoretzkiy, V. N.; Savenko, I. A.;  
Tulinov, A. F.

TITLE: Multiple scattering of protons with energy 75--200 keV in  
solid substances

SOURCE: Zh. eksper. i teor. fiz., v. 46, no. 5, 1964, 1901-1903

TOPIC TAGS: copper, aluminum, polystyrene, proton scattering,  
angular distribution, charge exchange

ABSTRACT: The study of multiple scattering of low energy heavy  
charged particles, which was started by the authors with carbon  
(ZhETF v. 42, 740, 1962) was continued with substances of higher Z.  
The angular distributions of protons scattered by thin foils of  
aluminum and copper were measured using nuclear emulsions mounted per-  
pendicular to the beam axis. The measurement procedure was improved

Card 1/4

ACCESSION NR: AP4037608

somewhat by using an electrostatic analyzer behind the scattering chamber to determine the proton energy before and after penetration of the target. The measurement data were used both in the theoretical analysis of the obtained results and as a means of checking the target thickness. The angular distributions of the multiply scattered protons were obtained for a set of copper foils 190--530  $\mu\text{g}/\text{cm}^2$  thick in the initial energy range  $E_0 = 193\text{--}93$  keV and for aluminum foils 52, 82, and 183  $\mu\text{g}/\text{cm}^2$  thick in the range  $E_0 = 184\text{--}75$  keV.

Measurements were also made with polystyrene targets (46 and 82  $\mu\text{g}/\text{cm}^2$ ) to obtain more accurate data for carbon at energies less than 100 keV. The results for copper and aluminum were analyzed on the basis of the Bethe theory. The theoretical calculations are found to be in fairly good agreement with the experimental data for practically all proton energies and target thicknesses, even in the multiple scattering region. The agreement is somewhat surprising since no allowance was made for charge exchange, which is consider-

Card 2/4

ACCESSION NR: AP4037608

able at low energies. Orig. art. has: 2 figures.

ASSOCIATION: Institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta (Nuclear Physics Institute, Moscow State University)

SUBMITTED: 27Jul63

DATE ACQ: 09Jun64

ENCL: 01

SUB CODE: NP

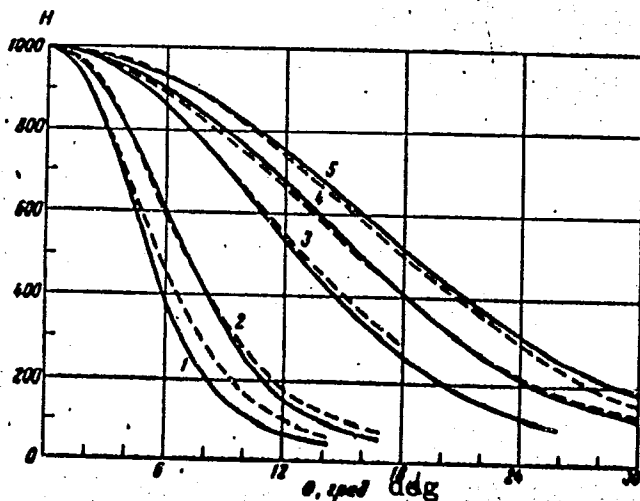
NR REF SOV: 001

OTHER: 001

Card 3/4

ACCESSION NR: AP4037608

ENCLOSURE: 01



Angular distribution for copper: dashed curves are experimental and continuous curves are theoretical. The different curves pertain to different thicknesses and initial energies.

Card 4/4

2000-01-01 00:00:00  
V. 1  
A. Dyrenko, V. B. Dyrenko  
Working on 100-200 keV  
Electrostatic generator of low energy  
scattering, aluminum, copper  
Continuation of an investigation  
of the energy of  $5 \times 10^4$  eV  
of protons, no. 2, 740, 1401. In the  
scattering of protons multiply a cluster  
of copper, aluminum, and polystyrene.  
Investigation, 100-200 keV  
more precise at energies of  
electrostatic generator of low energy  
the targets of copper and aluminum

of  
at  
measure  
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results  
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the

100-104

organic films of thickness  $10^{-4}$  cm. The film produced on a glass substrate is transparent. The steps taken to obtain the results are described. The results of the analysis placed on the regular distribution of the theory of statistical experiments. The results of the analysis are for all elements,  $^{12}\text{C}$ ,  $^{16}\text{O}$ ,  $^{18}\text{O}$ ,  $^{24}\text{Mg}$ , and  $^{28}\text{Si}$ . The results show that the distribution of energy protons (up to  $10^{-4}$  eV) is in good agreement with the Fermi model for the distribution of results obtained for both types of scattering to lighter elements. The more accurate approximation of the statistical theory results is shown, we have A. I. Kozlov and V. A. Kozlovskaya of the experimental results and calculations and the

1. The first of these is the fact that the
 2. Government has not been able to
 3. maintain a consistent policy
 4. in the past. It has been
 5. inconsistent in its
 6. treatment of the
 7. various groups
 8. and has not
 9. been able to
 10. maintain a
 11. consistent
 12. policy.



DVORETSKIY, V.R., inzh.; SUROVITSKAYA, T.S., inzh., otv. red.

[Technology of metals and structural materials; program for secondary specialized schools...] Tekhnologiya metallov i konstruktsionnye materialy; programma dlia srednikh spetsial'nykh uchebnykh zavedenii... Utverzhdena 26 dekabria 1959 g. Moskva, 1960. 12 p. (MIRA 14:10)

1. Russia (1923- U.S.S.R.) Ministerstvo vysshego i srednego spetsial'nogo obrazovaniya SSSR. Tsentral'nyy metodicheskiy kabinet po srednemu spetsial'nomu obrazovaniyu.

(Metallurgy—Study and teaching) (Building materials)

GET'MAN, A.A.; DVORETSKIY, V.V.

Analytic determination of the height-diameter ratio of risers.  
Lit.proizv. no.10:28-30 0 '64. (MIRA 18:4)

DVORETSKIY, Ya.

Semiprocessed food products in the restaurants of Pavlodar Province are cheaper, tastier, more economical. Obshchestv. pit. no.8:26-27 Ag '68. (MIRA 14:10)

1. Nachal'nik Pavlodarskogo oblastnogo upravleniya torgovli. (Pavlodar Province--Restaurant, lunchrooms, etc.)

ZAK, I.S.; DVORETSKIY, Ya.I.

Basic trends improving industrial sewing machines. Shvein. prom.  
no.2:30-34 Mr-Ap '59. (MIRA 12:6)

1.Podol'skiy mekhanicheskiy zavod im. Kalinina.  
(Sewing machines)

DVORETSKIY, YE. R.

Konstruktsii Uzlov Izmeritelnykh Sredstv v Mashinostroeni (Construction of  
Measuring Devices for Machine Industry), 278 p., Moscow, 1950.

<sup>1</sup>  
DVORETSKY, Ye. R.

According to Izvestiya, Acad. Nauk SSSR (OTN) 12, (1888-91) 1953, the following was read at the seminar of the Laboratory of Machine and Instrument Precision, Institute of Machine Science, Academy of Sciences, USSR in 1952 and the first half of 1953:

DVORETSKY, Ye. R. - delivered paper - "The effect on precision of grinding of methods of adjustment of dimensions on centreless grinding machines." The author suggested a method of adjustment which permits the total error of the method of treatment to be determined and which ensures the disclosure of the dominant components of the latter and the law of distribution of errors.

SO: ~~SECRET, Restricted, etc. etc.~~

595

AUTHOR: Dvoretzkiy, Ye. R.

TITLE: The Development of Devices for the In Situ Inspection of Components during Grinding (Sozdaniye Priborov Dlya Aktivnogo Kontrolya Detaley Pri Shlifovanii).

PERIODICAL: "Stanki i Instrument" (Machine Tools and Cutting Tools, No.3, 1957, pp.24-27 (U.S.S.R.)).

ABSTRACT: The difficulties of dimensional inspection in situ are discussed. A number of devices in different stages of development sponsored by the Office of Interchangeability (Byuro Vzaimoizmenyayemosti) are described. These include: a cantilevered jaw gauge BV-711 with a measuring feeler made by the Karkov Machine Tool Plant (Kharkovskiy Stankostroitel'nyy Zavod), an instrument (BV-220) for diameters between 15 and 60 mm with two electric contacts for switching over to the finishing operation and for stopping, made by the "Kalibr" Plant and intended for the inner races of ball bearings, an instrument (BV-903) for stepped shafts with the shift in the jaw position actuated by stops, another stepped shaft device (BV-904) for diameters between 5 and 60 mm is mounted on the machine table, one unit corresponds to each step. In another variant (BV-907) rough and finish grinding are looked after by two different scales. In an instrument BV-854 a measuring feeler is made to move vertically in an arrangement of the radial drill type for the inspection of surface grinding. This device is designed to inspect interrupted surfaces provided the measuring impulse exceeds 0.2 sec. Another instrument under

595

The Development of Devices for the In Situ Inspection of Components during Grinding (Cont.).

development by the Office of Interchangeability measures whole diameters in internal cylindrical grinding. The sum of both measuring lever displacements is communicated to a dial indicator. In a device for the inspection on and resetting of centreless grinders, the component is placed after grinding in a prism pressed down and inspected by a pneumatic gauge. A device for centreless grinders working by the plunge grinding method has a jaw member which swings out during unloading. In automatic production lines a locking device is useful in which every component after the completion of grinding has two diameters measured pneumatically. If three components in a row are outside the tolerance zone the machine is stopped. A list of requirements is stated applying to properties of the machine, its control circuits, coolant supply and filtration, maintenance of grinding temperature and swarf removal arrangements. The combination of errors is discussed.

There are 13 illustrations.

Card 2/2

AUTHORS: Dvoretskiy, Ye.R., and Malyy, D.D. SOV-115-58-3-10/41

TITLE: Automation of the Control System in Machine-Building (Avtomatizatsiya kontrolya v mashinostroyenii.)

PERIODICAL: Izmeritel'naya tekhnika, 1958 Nr 3, pp 34 - 39 (USSR)

ABSTRACT: The authors make a general survey of the subject of "active" control of devices, i.e. controlling machines in the work process. The article also includes brief design description characteristics and drawings of several Bureau of Interchangeability control devices for grinding machines: "BV-711", for both automatic and visual control; "BV-962", for automatic control of "KhSh-202" circular grinder (Fig. 1); "BV-904" and "BV-907", for circular grinders with visual control of outer diameters of 5 to 60 mm (Fig. 2); pneumatic "BV-928", for "active" and visual control of 8 to 60 mm diameter (Fig. 3); "BV-903", for visual control of 15 - 60 mm diameters (Fig. 4); "BV-912", for plain grinders (produced by the Chelyabinsk Plant on orders); "BV-967", for "active" control on internal grinders "3A250" and "3B250" (Fig. 5), differing from "BV-962" only in the design of the measuring part; "BV-893" and "BV-918" (Fig 6 and 7), for "active" control of centerless grinders "3G182". Foreign designs of

Card 1/2

SOV-115-58-3-10/41

Automation of the Control System in Machine-Building

automatic control devices for grinding machines are mentioned (USA, German), and it is stated that the design shown in Fig. 6 is extensively used abroad. Production of "active" control devices for honing, boring, gear generating machines and lathes is planned. The planned production rate growth in the 7-year plan 1958-1965 is illustrated by tables (table 1, 2). There are 8 diagrams and 2 tables.

1. Control systems    2. Machines--Design

Card 2/2

AUTHORS: Zimin, N.I., and Dvoretzkiy, Ye.R. SOV-28-58-4-3/35

TITLE: Automation of Dimension Control in Machinebuilding (Avtomatizatsiya kontrolya razmerov v mashinostroyenii)

PERIODICAL: Standartizatsiya, 1958, Nr 9, pp 11 - 16 (USSR)

ABSTRACT: General information is presented on expanded application of automatic devices for quality control of finished machine parts. Two methods are discussed: 1) active control during the work process; 2) final control of the manufactured parts. It is recommended that both methods be combined according to the existing equipment. In automatic production lines equipped with adjusting and blocking devices on individual machines, the control device will in most cases be placed at the end of the technological process in order to ensure efficient production. The choice of individual or complex automatic control devices depends on their design; it is recommended that complex devices be used for subsequent or simultaneous control. Measuring devices of "small mechanization" for manual use can be produced in any plant and can be used in serial pro-

Card 1/2

Automation of Dimension Control in Machinebuilding SOV-28-58-4-3/35

duction and even in large-scale production for the control of complicated non-transportable parts.

ASSOCIATION: Byuro vzaimozamenyayemosti Komiteta standartov, mer i izmeritel'nykh priborov (Office of Parts Interchangeability of the Committee for Standards, Measures and Measuring Devices)

1. Machines--Production 2. Measurements--Control systems

Card 2/2

DVORETSKIY, Ye. R.

25(1)	PHASE I BOOK EXPLOITATION SOV/2383
	Akademiya nauk SSSR. Komissiya po tekhnologii mashinostroyeniya
	Automatizatsiya mashinostroyeniya. t. II: Privod i upravleniye rabochimi mashinami (Automatic Control of Machine-Building Processes. Vol. 2: Drives and Control Systems for Process Machinery) Moscow, Izd-vo AN SSSR, 1955. 370 p. Errata slip inserted. 5,000 copies printed.
	Ed.: V.I. Dikushin, Academician; Ed. of Publishing House: D.M. Ioffe; Tech. Ed.: I.F. Kus'min.
	PURPOSE: This book is intended for engineers dealing with automation of various machine-building processes.
	COVERAGE: This is the second volume of transactions of the second Conference on Overall Mechanization and Automation of Manufacturing Processes held September 15-23, 1954. The present volume consists of three parts; the first part dealing with automation of engineering measuring methods of machined parts, inspection methods for automatic production lines, in-process inspection devices, application of electronics in automatic inspection of measuring processes, and the second part dealing with automatic drives and control systems for process machinery, including application of digital computers in the control of metal-cutting machines tools, reliability of relay systems, application of gas-tube frequency converters in the control of induction motor speeds, magnetic amplifiers and their use in automatic systems, hydraulic drives, and ultrasonic machines. Part three deals with mechanisms of automatic machines and automatic production lines. The subjects discussed include linkage, indexing, and other mechanism-type mechanisms, friction drives, automatic sorting devices, diaphragm-type pneumatic drives, automatic auxiliary devices for automatic production lines, and methods of design and accuracy of cams. No person-alities are mentioned. There are no references.
	ORGANIZATION: I. Ye. [Deceased]. Automatic Control of Dimensions in Machine Building 5
	Altshuler, A.M. Determining Optimum Conditions for Controlling the Mean Diameter of Machined Parts 9
	Kopayevich, M. Ye. [Lenin prizewinner]. Inspection Methods For Automatic Production Lines 29
	Dvoratskiy, Ye. B. Standard Devices for Active Control 39
	Vikhman, V.S. Application of Electronics in Automating Linear Measuring Methods 45
	Kuzov, I.A. Metrological and Statistical Checking of Some Automatic Inspection and Sorting Systems 53
	Shilov, G.A., Ye. M. Draskin. Experience Gained in Developing Machines for Automatic Inspection of Bearing Races 62
	Kaykov, P.M. Digital Computers in Automatic Control of Processes 75
	Rybakov, Ye. A. Some Problems Concerning Digital Control of Metal-cutting Machine Tools 88
	Zisman, V.G., and I.A. Vulfson. Designing Digital Program Control Systems for Machine Tools 98
	Solovov, B.S. Problems Concerning the Reliability of Relay Systems 107
	Lebedev, V.A. Application of Gas Tube Frequency Converters in the Control of Induction Motor Speeds by the Frequency Method 117
	Mayda, V.A. Controlled Electric Drive for Metal-cutting Levitskiy, M.I. Development of the Theory of Mechanisms of Automatic Machines Card 5/7 203

DVORETSKIY, Ye. R.

25(1)

PHASE I BOOK EXPLOITATION

SOV/2569

Grigor'yev, Ivan Andreyevich, and Yevgeniy Romanovich Dvoretzkiy

Kontrol' razmerov v mashinostroyeni; spravochnoye posobiye  
(Inspection of Dimensions in Machine Building; Manual) Moscow,  
Mashgiz, 1959. 399 p. Errata slip inserted. 10,000 copies  
printed.

Reviewer: Ye. M. Levenson, Engineer; Ed. (Title page):  
I. Ye. Gorodetskiy, Doctor of Technical Sciences, Professor  
(Deceased); Ed. (Inside book): M. N. Morozova, Engineer;  
Tech. Eds.: B. I. Model' and V. D. El'kind; Managing Ed. for  
Literature on Metalworking and Tool Making (Mashgiz):  
R. D. Beyzel'man, Engineer.

PURPOSE: This manual is intended for designers, technologists,  
and personnel employed in quality control. It may also be  
used by students of institutions of higher education studying  
machine design.

Card 1/12

Inspection of Dimensions (Cont.)

SOV/2569

COVERAGE: This book is a systematized outline of contemporary methods of checking and measuring linear and angular dimensions and the accuracy and trueness of form of machine parts and components. A brief description is given of industrial methods of engineering-precision measurements designed to improve the accuracy and productivity of quality control operations. Such basic types of measuring instruments as gages and indicators of various types and design are discussed. The main part of the manual is devoted to universal measuring devices and specialized checking arrangements which are used in mass production and which can be made in the machine shop. The material in the book is grouped according to the type of measurement and parameters to be checked, rather than according to the devices employed. The authors thank I. Ye. Gorodenko, Doctor of Technical Sciences, for permission to use his material in this manual. There are 143 references: 141 Soviet and 2 German.

Card 2/12

Inspection of Dimensions (Cont.)

SOV/2569

TABLE OF CONTENTS:

Foreword	3
Ch. I. Classification of Measuring Devices and Methods	5
1. Measuring, gaging, and inspection	5
2. General classification of measuring devices	5
3. Measuring methods	8
Ch. II. Metrological Characteristics of Measuring Devices	10
1. Basic metrological characteristics of measuring devices	10
2. Errors in measuring	12
Ch. III. Basic Information on the Theory of Errors and Its Application to Measurement Techniques	22
1. Errors in measurements	22
2. Determination of the total error of measurement	29

Card 3/12

Inspection of Dimensions (Cont.)

SOV/2569

3. Examples of the application of the theory of errors to measurement technique	29
Ch. IV. Selection and Purpose of Measuring Devices and Methods of Inspection	32
1. Selection and purpose of measuring devices	32
2. Methods of inspection	40
Ch. V. Universal Measuring Instruments	44
1. Mechanical instruments	44
2. Optical and optical-mechanical instruments	49
3. Pneumatic instruments	52
4. Electrical instruments	57
Ch. VI. Methods and Means of Checking Smooth Cylindrical Shafts	70
1. Measuring with vernier calipers and micrometers	70
2. Measuring with lever-type and indicator caliper gages	73
3. Measuring with lever-type and indicator dials mounted on a stand	75

Card 4/12

Inspection of Dimensions (Cont.)

SOV/2569

4. Measuring with jaw limit gages	77
5. Measuring by means of a sorting device	81
6. Measuring by means of indicator gages	83
7. Measuring by means of devices with an electric indicator	86
8. Simplest automatic devices for measuring outside diameters of parts	88
9. Measurements of shafts taken during operations on grinding machines	91
10. Measurement of small-diameter shafts	96
11. Measurement of large-diameter shafts	102

Ch. VII. Methods and Means of Checking Smooth Cylindrical Holes

1. Measuring with inside calipers and micrometers	111
2. Measuring with inside indicators and devices with indicator dials	111
3. Measuring holes with electric devices	112
4. Measuring with plug gages	122

Card. 5/12

Inspection of Dimensions (Cont.)

SOV/2569

5. Measuring with pneumatic plug gages	125
6. Measuring with optical plug-type internal gages	128
7. Measuring deep holes	129
8. Measuring holes during machining	134
9. Measuring small holes	141
10. Measuring large holes	147
Ch. VIII. Measuring Deviations From the Correct Geometric Shape	151
1. Purpose of measuring devices for checking errors in shape	151
2. Measuring ovalness and cylindricity	152
3. Measuring taper, convexity, concavity, and of out-of-trueness of the axis	154
4. Measurement of complex deviations from shape	156
5. Measurement of the geometric shape of holes	157
6. Measurement of form deviation by automatic devices	158
Ch. IX. Measurement of Height, Thickness, and Depth	161
1. Measurement of height and depth with a universal measuring device	161
2. Measuring thickness with universal measuring devices	164

Card 6/12

Inspection of Dimensions (Cont.)

SOV/2569

3. Measuring with gages, graduated gages, and dial gages	165
4. Measurements with indicators (single measurement)	167
5. Indicators for consecutive measurements of height, depth, and thickness	170
6. Indicator and electrical devices for simultaneous measurement of several depth, thickness, and height values	170
7. Measurement of depths, thicknesses, and heights of small parts with indicator devices	172
8. Measuring necks, undercuts, and journals on shafts with pneumatic and electrical devices	176
9. Measuring heights with mechanized devices	177
Ch. X. Measuring Angles and Tapers of Flat Parts	181
1. Measurement of angles and tapers with universal measuring instruments	181
2. Measuring tapers with gages	184
3. Measuring tapers by means of ring gages, rollers, and balls	186

Card 7/12

Inspection of Dimensions (Cont.)

SOV/2569

4. Measuring taper by means of sine-principle devices	190
5. Measuring taper by means of lever devices	192
6. Measuring short tapers on shafts with indicator gages	201
7. Measuring tapers by means of pneumatic gages	204
8. Measuring angles of flat parts	207
9. Measuring angles of turn in relation to an axis	211
Ch. XI. Measurement of Cylindrical and Tapered Threads	218
1. Measuring cylindrical threads with gages	218
2. Complex measurements of cylindrical threads with indicator gages and projecting devices	220
3. Measuring the effective diameter of cylindrical thread with microscopes	225
4. Measurement of the effective diameter of cylindrical thread with three wires [three-wire method]	227
5. Measurement of the effective diameter of cylindrical thread with anvils and rollers	232
6. Measurement of the pitch of cylindrical thread	233
7. Measurement of half the thread angle of cylindrical thread	238
8. Measurement of the outside and root diameters of cylindrical thread	241

Card 8/12

Inspection of Dimensions (Cont.)

SOV/2569

9. Measuring reduced effective diameter of internal cylindrical thread	241
10. Measuring cylindrical thread with gages and reversible holders [chucks]	244
11. Automated measurement of cylindrical thread	249
12. Measuring tapered thread with gages	251
13. Measuring individual elements of tapered thread	253
Ch. XII. Measurement of Keyed and Splined Joints	259
1. Measuring keyways with gages	259
2. Measuring splines with gages	260
3. Measuring individual elements of splines with universal devices	262
Ch. XIII. Checking for Trueness and Flatness	271
1. Measurement of trueness and flatness by means of straight-edges and gage blocks	271
2. Measuring flatness and trueness by means of indicator devices	274

Card 9/12

Inspection of Dimensions (Cont.)

SOV/2569

3. Measuring trueness and flatness by means of wires, levels, and optical devices	276
Ch. XIV. Measurement of Surface Finish	287
1. Methods and means of quantitative computation of surface finishes of selected samples	287
2. Methods and means of qualitative computation of surface finishes by comparison with a master sample	294
Ch. XV. Methods and Means of Measuring the Relationship of Surfaces	299
1. Measuring radial runout, coaxiality, and variations in wall thickness	299
2. Measuring axial runout and nonperpendicularity of axes	312
3. Measuring distances between hole centers	326
4. Measuring the location of a hole in relation to a reference surface	332
5. Measurement of nonparallelism of hole and shaft axes	333
6. Measuring the nonparallelism of flat surfaces	335
7. Measuring the symmetry of hole axes and keyways	339

Card 10/12

Inspection of Dimensions (Cont.)

SOV/2569

- 8. Measuring the location of surfaces by means of jigs with fixed gages and indicators 341

Ch. XVI. Measuring Different Parameters of Parts by Means of Checking Devices 347

- 1. Consecutive measurement of different parameters of parts 347
- 2. Simultaneous measurement of different parameters of parts 351

Ch. XVII. Measurement of Radii of Curved Profiles and Spherical and Complex Surfaces 354

- 1. Measurement of radii of curved profiles and spherical surfaces 354
- 2. Measurement of complex profiles 361

Ch. XVIII. Measurement of Gears 365

- 1. Checking the kinematic accuracy of spur gears 366
- 2. Checking the smoothness of operation of spur gears 374

Card 11/12

Inspection of Dimensions (Cont.)	SOV/2569
3. Checking the engagement of spur gears	379
4. Checking the backlash of spur gears	383
5. Measurement of certain parameters of bevel and worm gears	388
Bibliography	391
AVAILABLE: Library of Congress	

Card 12/12

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S/121/60/000/008/001/012  
A004/A002

AUTHOR: Dvoretskiy, Ye. R.

TITLE: The Automation of Checking Processes in Mechanical Engineering

PERIODICAL: Stanki i instrument, 1960, No. 8, pp. 1-4

TEXT: The development of automation and mechanization of production processes makes it necessary to develop the automation of checking processes accordingly. The author points out that the present level of automatic checking processes and devices in the Soviet Union can be realized by looking at the designs developed and built by various organizations (BV, NII Avtoprom NII Traktoro-detal', the "Kalibr", LIZ, ZIL, GPZ and other plants). He enumerates the electro-contact and pneumatic pick-ups of various designs having an accuracy up to 0.5-1, and points out the necessity of developing and improving small-size and hermetically sealed pick-ups. The development of all types of automatic checking equipment is delayed by the inadequate production of pick-ups and their low quality. Hitherto, checking automatics are most extensively used in the bearing and automobile industries, and some of them are able to perform the work of up to 10 checking inspectors. The existing checking automatics ensure the checking of: 1) conicity

Card 1/3

S/121/60/000/008/001/012  
A004/A002

# The Automation of Checking Processes in Mechanical Engineering

of cylindrical surfaces, 2) diameter of conical surfaces, 3) thickness, difference in wall-thickness and strip thickness in rolling operations, 4) non-perpendicularity of faces, 5) thread accuracy, 6) properties of geared wheels and 7) elasticity, hardness, weight and other non-linear parameters. Referring to the main trends and development prospects in automatic checking, the author points out that the increased precision in mechanical engineering require pick-ups with error factors of fractions of  $\mu$ , both for contact and non-contact measurements. The Byuro vzaimozamenyayemosti (Office of Interchangeability) works on the development of pneumatic checking systems with dynamic pick-up setting, i. e. with movable calibration devices instead of the present static systems with stationary calibrating devices and moving machine parts. Besides, other organizations, like ENIMS etc., should continue their work in improving the existing designs of electrocontact, pneumatic, inductive and capacity pick-ups, while the designers of machine tools have to cope with the following problems: 1) Machine tools controlled according to measuring results should obtain a higher sensitivity of their performing units to small displacements; 2) Grinding machines should be equipped with relays switching off of the machine if the grinding stress exceeds

Card 2/3

S/121/60/000/008/001/012  
A004/A002

The Automation of Checking Processes in Mechanical Engineering

established magnitudes; 3) The cooling systems of machine tools have to be equipped with high-quality filters, since contaminated coolants may distort the measuring results; 4) The basic surfaces of machine tools (tables, centers etc.) should be subjected to automatic blast-cleaning in order to remove chips and grains of abrasives; 5) Blocking devices should be used to prevent that measuring instruments are switched off by the operator. There are 13 figures. ✓

Card 3/3

*DVORETSKIY, YE.R.*

PHASE I BOOK EXPLOITATION

SOV/5862

Vysotskiy, A. V., Ye. R. Dvoretzkiy, V. V. Kondashevskiy, V. T. Kuz'michev,  
I. K. Morozov, P. M. Polyanskiy, Z. L. Tubenshlyak, G. V. Khokhlova,  
G. V. Chasovnikov, and M. L. Shleyfer

Pribory i ustroystva dlya aktivnogo kontrolya razmerov v mashinostroyeni  
(Instruments and Equipment for the Active Control of Dimensions in Machine  
Building) Moscow, Mashgiz, 1961. 303 p. (Series: Progressivnyye sredstva  
kontrolya razmerov v mashinostroyeni) Errata slip inserted. 7000 copies  
printed.

Ed. of Series: B. S. Bayburov, M. I. Kochenov, and D. D. Malyy; Scientific Ed.:  
Ye. R. Dvoretzkiy; Ed. of Publishing House: A. G. Akimova; Tech. Ed.: V. D.  
El'mind; Managing Ed. for Literature on Means of Automation and Instrument  
Building: N. V. Pokrovskiy, Engineer.

PURPOSE: This book is intended for technical personnel engaged in the design of  
controlling devices. It may also be useful to students specializing in the  
field of instrumentation at schools of higher technical education and tekhnikums.

Card 1/6

Instruments and Equipment (Cont.)

SOV/5862

**COVERAGE:** Dimensional control instruments and devices used in machine building which have been tested under experimental and industrial conditions are described. Concise information on non-Soviet control systems is also given. The present work is part of a series devoted to modern controlling devices, and was recommended by the Commission of the State Scientific-Technical Committee of the Council of Ministers USSR. The commission was set up to assist in the introduction of advanced methods and devices of dimensional control in machine building. No personalities are mentioned. There are 74 references: 47 Soviet, 20 English, and 7 German.

TABLE OF CONTENTS:

Foreword	5
Ch. I. General Observations on Instruments and Devices of Active Control (Ye. R. Dvoretzkiy)	7
1. The role of active control and the provisions for its introduction	7
2. Special features in the development of active control instruments	8
3. Basic types of the means of active control	9

Card 2/6

Instruments and Equipment (Cont.)

80V/5862

Ch. II. Instruments and Devices for Active Control of Shaft Dimensions in Cylindrical Grinding (A. V. Vysotskiy, V. V. Kondashevskiy, V. T. Kuz'michev, I. K. Morozov, P. M. Polyanskiy, G. V. Khokhlova, G. V. Chasovnikov, and M. L. Shleyfer)	18
1. Instruments for the indirect visual control of shaft dimensions by measuring the displacement of the grinding-wheel spindle stock	18
2. Single-contact instruments and devices for the control of shaft dimensions	19
3. Two-contact instruments and devices for the control of shaft dimensions	23
4. Three-contact instruments and devices for the control of shaft dimensions	51
5. Pneumatic instrument for contactless automatic control	83
6. Instruments and devices for the control of stepped shafts	85
7. Instruments for the control of recessed shaft surfaces	88
8. Control instruments and devices used in face-grinding on cylindrical grinders	103

Card 3/6

Instruments and Equipment (Cont.)

80V/5862

9. Device for automatic control in the grinding of shafts with reference to the hole of a conjugated part (bushing)	108
10. Automatic readjustment of cylindrical grinders	113
Ch. III. Instruments and Readjusting Devices for the Control of Shaft Dimensions in Centerless Grinding (A. V. Vysotskiy, V. V. Kondashevskiy, P. M. Polyanskiy, G. V. Khokhlova, M. L. Shleyfer and Z. L. Tubenshiyak	115
1. Instruments and devices for the control of shaft dimensions in centerless grinding	115
2. Readjusting devices	118
3. Protective-blocking devices of centerless grinders	146
Ch. IV. Control Instruments and Devices in Internal Grinding (A. V. Vysotskiy, V. V. Kondashevskiy, V. T. Kuz'michev, P. M. Polyanskiy, G. V. Khokhlova, G. V. Chasovnikov, M. L. Shleyfer)	148
1. Device for control with plug gages	148
2. Single-contact instruments and devices	151
3. Two-contact instruments and devices	178
4. Three-contact instrument with vibratory contacting transducer for visual control	196

Card 4/6

Instruments and Equipment (Cont.)

SOV/5862

Ch. V. Instruments and Devices for Hole Control in Honing (V. V. Kondashevskiy, V. T. Kuz'nichev, and M. L. Shleyfer)	199
Ch. VI. Instruments and Devices for Active Control in Surface Grinding (V. V. Kondashevskiy, V. T. Kuz'nichev, I. K. Morozov, and G. V. Khokhlova)	221
1. Instruments and devices for in-process control in surface grinding	221
2. Devices for automatic readjustment of surface grinders	231
Ch. VII. Device for In-Process Control in Grinding Parts With Contour Surfaces (V. V. Kondashevskiy)	243
Ch. VIII. Control Instruments and Devices Used in Lathework (A. V. Vysotskiy, V. V. Kondashevskiy, V. T. Kuz'nichev and M. L. Shleyfer)	246
1. Instruments and devices for in-process control in machining	246
2. Readjusting devices for control after turning	250
3. Blocking and protective devices used in lathework	262
Ch. IX. Devices for Automatic Readjustments in Gear Tooth Machining (V. V. Kondashevskiy)	266
Card 5/6	

Instruments and Equipment (Cont.)

SCW/5862

Ch. X. Devices for Dimensional Control of the Boring Mill Operation (V. V. Kondashevskiy)	273
1. Automatic readjustment of boring mills	273
2. Protective blocking devices of boring mills	277
Ch. XI. Protective Blocking Devices of Drilling and Boreaching Machines (V. V. Kondashevskiy)	282
Ch. XII. Combined Instruments for the Control of Several Part Dimensions (V. T. Kuz'nichev, P. M. Polyanskiy, G. V. Khokhlova; and G. V. Chasovnikov)	288
Bibliography	300

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Card 6/6

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S/121/62/000/008/001/002  
D040/D113

AUTHOR: Dvorotskiy, Ye.R.

TITLE: The present state and prospective development of automatic control  
in machinebuilding

PERIODICAL: Stanki i instrument, no.8, 1962, 19-21

TEXT: Developments and trends in the automatic control of machine tools in the USSR and Western countries are reviewed. Special attention is paid to pickups of all types - electric contact, inductive, pneumatic, capacitive, photoelectric, mechanotrons. The Byuro vzaimozamenyayemosti (Office of Interchangeability)-BV has developed and tested new pneumatic control arrangements for grinding shafts according to the dimensions of the adjoining bushing. Such devices, for example the SB-4009 (BV-4009) which is shown in a diagram, will require pickups with a maximum tolerance of 0.1-0.2 $\mu$ . Capacitive pickups are little used in the USSR and mechanotrons are not yet being serially produced since the problem of the automatic command output has not been solved and endurance tests have not been conducted. Photoelectric pickups with a to-

Card 1/2

S/121/62/000/006/001/002

The present state and prospective development ..... D040/D113

tolerance of  $0.5\mu$ , are now being produced by the Leningradskiy instrumental'nyy zavod (Leningrad Instrument Plant) for pre-assembly selection. Two types of inductive pickup are being produced, and the "Kalibr" Plant produces inductive automatics for the control of balls. A diagram shows a  $\text{ЭБ-4004}$  (BV-4004) pneumatic control system for grinding small bores; the system includes memory devices such as magnets for fixing the position of the measuring rods. Basic trends in the development of Soviet automatic control devices are outlined including: an absolute method of measurement should be aimed at and rapid readjustment to another gage guaranteed; the device should control broken surfaces - for universal machine tools this is imperative; the device should partly remain inertial so as to eliminate the effect of vibrations; set types of machines for set parts should be manufactured. There are 2 figures. ✓

Card 2/2

ZYABREVA, N.N., kand. tekhn.nauk, dots.; SHEGAL, M.Ya., kand. tekhn. nauk, dots.; DVORETSKIY, Ye.R., kand. tekhn. nauk, retsenzent; TISHCHENKO, O.F., prof., doktor tekhn. nauk, red.; IVANOVA, N.A., red.isd-va; SOKOLOVA, T.F., tekhn. red.; TEKHANOV, A.Ya., tekhn. red.

[Problems and examples for a course on the principles of interchangeability and technical measurements] Sbornik zadach i primerov po kursu "Osnovy vzaimozameniaemosti i tekhnicheskie izmereniia." Moskva, Mashgiz, 1963. 280 p. (MIRA 16:5)  
(Interchangeable mechanisms)

DVORETSKIY, Ye.R.

More extensive use of measuring instruments and automatic controllers  
for checking dimensions. Mashinostroitel' no.9:5-7 S '63.

(MIRA 16:10)

(Measuring instruments) (Automatic control)

DVORETSKOV, N.G., inzh.

Using octadecylamine to prevent the corrosion of pipelines. Vod.  
i san. tekhn. no. 10:14-15 0 '64. (MIRA 18:3)

DVORETSKOVA, N.

Potentialities for reducing the cost of the tractor work of machine-  
tractor stations. Fin.SSSR 16 no.9:32-35 S'55. (MLRA 8:12)  
(Machine-tractor stations--Finance)

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DVORIASHIN, A.S.

Short-period variations of the magnetic field and their relationship with solar corpuscular radiation and the ionosphere.  
Mezhdunar.geofiz.god no.4:107-130 '61. (MIRA 14:10)

1. Krymskaya astrofizicheskaya observatoriya AN SSSR.  
(Magnetism, Terrestrial) (Solar radiation) (Ionosphere)

DVORIN, R.S.

Work of the organizations of the Ministry of the Construction  
Industry of the R.S.F.S.R. Nov. tekh. i pered op. v stroi. 20  
no.1:1-3 Ja '58. (MIRA 11:2)

1. Zamestitel' nachal'nika planovo-proizvodstvennogo upravleniya  
Ministerstva stroitel'stva RSFSR.  
(Construction industry)

DVORIN, R.S.

"Economics of the construction industry in the U.S.S.R." by M.E.  
Shass, by the State Construction Publishing House, Moscow, 1958.  
Nov. tekhn. i pered. op. v stroi. 20 no.9:31-32 S '58.

(MIRA 11:10)

(Construction industry--Finance)  
(Shass, M.E.)

DVORIN, Roman Semenovich; GUREVICH, M.S., nauchn. red.;  
SHITOVA, L.N., red.

[Planning of assembling and special construction operations] Planirovanie montazhnykh i spetsial'nykh stroitel'-  
nykh rabot. Moskva, Stroiizdat, 1964. 120 p.  
(MIRA 17:5)

DVORIN, S.A.; SMIRNOV, Ye.A.

Electrostatic concentration of sylvinite ores. Dokl. AN BSSR 8  
no.8:530-533 Ag '64. (MIRA 17:11)

1. Institut obshchey i neorganicheskoy khimii AN BSSR i Vse-  
soyuznyy nauchno-issledovatel'skiy institut galurgii. Predstav-  
leno akademikom AN BSSR M.M. Pavlyuchenko.

*DVORIN, S.S.*

LUK'YANOV, Stepan Petrovich; POLIBANOV, Konstantin Yakovlevich; ~~DVORIN, S.S.~~  
redaktor; YABLONSKAYA, L.V., redaktor izdatel'stva; BERLOV, A.P.,  
tekhnicheskii redaktor

[Long time storage of coal] Dlitel'noe khranenie uglei. Moskva,  
Gos.nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii,  
1957. 82 p. (MLRA 10:7)  
(Coal--Storage)

AUTHOR: Dvorin, S.S.

68-5-1/14

TITLE: Technological classification of coals of the U.S.S.R.  
(Tekhnologicheskaya klassifikatsiya kammenykh ugley S.S.S.R.)

PERIODICAL: "Koks i Khimiya" (Coke and Chemistry), 1957, No.5,  
pp.3-9 (U.S.S.R.).

ABSTRACT: The necessity for the classification of coals into technological types and groups according to similarities and differences in their properties and behaviour in coal blends is discussed. The main argument is that planning of the mining and delivery of coals for coking according to their trade marks cannot secure the required stability in the properties of coke produced. This is due to the fact that coals of the same trade mark differ considerably in their properties. The classification should secure the replaceability of coals of the same technological group. Classification of coals according to volatile matter content ( $V_r$ ) and thickness of plastic layer ( $y$ ) recently introduced is an improvement on the previous trade classification but still possesses a number of deficiencies. Some examples of these deficiencies from the following coal basins are quoted:- Donetsk basin GOCT 8180-56, Kuznetsk basin GOCT 8162-56, Karagandinsk basin GOCT 8150-56, Kizelovsk basin GOCT 7050-54 and Pechorsk basin GOCT 6991-54. The

Card 1/2

68-5-1/14  
Technological classification of coals of the U.S.S.R. (Cont.)  
technological classification of U.S.S.R. coals is given in table 2. The classification indices ( $V^r$  and  $y$ ) used are considered to be insufficient for the clear division of coals outside the middle range of coal ranks (with high and low volatiles, low coking and completely non coking). Some new methods of evaluation of coking ability which will divide such coals into narrow technological groups is necessary. For these reasons a study of methods used in the International Classification of coals and the development of a single classification for all Russian coals as well as the use of petrographic methods for classification purposes is recommended. There are 2 tables.

ASSOCIATION: Technical Directorate of the Min. of Ferrous Metallurgy, U.S.S.R. (Tekhnicheskoye Upravleniye M.Ch.M. S.S.S.R.)

AVAILABLE:

Card 2/2

DVORIN, S.S.

Nomenclature of the petrographic constituents of coals for technological purposes. Koks i khim. no.7:9-12 '57. (MLRA 10:7)

1. Sovet proizvoditel'nykh sil Severa Akademii nauk SSSR.  
(Coal--Terminology) (Petrology--Nomenclature)

DVORIN, S. S.

68-7-3/16

AUTHOR: Dvorin, S.S.

TITLE: Terminology of Petrographic Components of Coals for Technological Purposes. (Terminologiya Petrograficheskikh Komponentov Kamennykh Ugley Dlya Tekhnologicheskikh Tseley).

PERIODICAL: Koks i Khimiya, 1957, Nr 7, pp. 9-12 (USSR)

ABSTRACT: Terminology for coal macerals for technological purposes accepted during the All-Union Conference of Coal Petrographers of the USSR in May 1956 is given (Table 1). A comparison of the new names of petrographic microcomponents with some which were used most often in the USSR is given in Table 2, and characteristics and properties of microcomponents in Table 3. It is requested in the editorial note that the authors should use the above described nomenclature. There are 3 Tables.

ASSOCIATION: SOPS AN SSSR.

AVAILABLE: Library of Congress

Card  
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DVORIN, S.S.

25(5)

PHASE I BOOK EXPLOITATION SOV/1497

Akademiya nauk SSSR. Institut nauchnoy i tekhnicheskoy informatsii

Metallurgiya SSSR, 1917-1957, t. 1 (Metallurgy of the USSR, 1917 - 1957, Vol. 1)  
Moscow, Metallurgizdat, 1958. 745 p. 3,000 copies printed.

Ed. (Title page): I. P. Bardin, Academician; Ed. (Inside book): G. V. Popova;  
Tech. Ed.: O. G. Bekker.

PURPOSE: The book is intended for scientific workers and engineers in metallurgical plants and in the machine-building industry. It may also be used by students in advanced courses in metallurgical vuzes.

COVERAGE: This collection of articles covers extensively practical and theoretical developments in Soviet metallurgy during the last 40 years. The material deals with the discovery and development of the major ore deposits and the growth of the metal industry in various parts of European and Asiatic USSR. Research institutes, laboratories, their location, and the names of the scientists and engineers involved are listed. Many papers contain so many references and names of various personalities that it was considered beyond the scope of the coverage of each article to list them. The authors claim that the processes,

Card 1/21

Metallurgy of the USSR (Cont.)

SOV/1497

methods and theories described in this book reflect the most recent developments in Soviet metallurgy.

TABLE OF CONTENTS:

Introduction

3

Bardin, I.P., and V.V. Rikman. Ferrous Metallurgy in the USSR During the Soviet Regime

9

The authors outline the development of the ferrous industry in the USSR from 1913 to 1955. Annual production figures are given and include regional distribution. Achievements of the Five Year Plans are mentioned. There are 16 Soviet references.

Patkovskiy, A.B. Preparation of Raw Materials for Blast Furnaces

33

An outline is given of the development of ore beneficiating plants in the USSR. There are flow sheets and diagrams showing basic methods of ore concentration. Agglomeration of iron ore is discussed. The importance of metallurgical research is stressed. There are 15 Soviet and 3 English references.

Card 2/21

Metallurgy of the USSR (Cont.)

SOV/1497

Dvorin, S. S. . . . Coke and Chemical Industry in the USSR

61

The article gives the geographical location of coke plants and production figures from 1913 to 1955. The rate of development and the chemicals produced are listed.

Tsylev, L.M., and N.K. Leonidov. Development of Blast Furnace Production in USSR

86

The authors describe the increase of cast iron production from 1913 to 1956. As a result of intensive geological exploration new deposits of iron have been discovered in different parts of the USSR (locations given). A table lists the amount of pig iron and manganese produced. The article deals with the following subjects: fuel, design of blast furnaces and auxiliaries, dimensions of blast furnaces, loading arrangements, removal of iron and slag, air-blow installations, air-heating arrangements, gas cleaners, miscellaneous equipment, design features, and the last chapter discusses in detail the means of boosting production of pig iron. There are 21 Soviet references.

Card 3/21

AUTHOR: Dvorin, S.S.

SOV/68-59-1-16/26

TITLE: Conference on the Widening of Resources of Coking Coals in the Kuznetskiy Basin (Soveshchaniye po rasshireniyu syr'yevoy ugol'noy bazy koksovaniya v Kuznetskom basseyne)

PERIODICAL: Koks i Khimiya, 1959, Nr 1, pp 56 - 60 (USSR)

ABSTRACT: The conference took place in the town of Kemerovo, on June 12 - 13, 1958 and was organised by the metallurgical and coking sections of the Technical-economic Council of the Kemerovo Sovnarkhoz and by the coal group of the GNTK Soveta Ministrov RSFSR (State Scientific-technical Committee of the Council of Ministers of the RSFSR). Chief engineer of the "Kuzbassugol", N.I. Lindenau, reported on the perspective of winning coking coals from the Kuznetskiy Basin during 1959-1965. The total deliveries of coking coals from the Kuznetskiy Basin should increase from 25.1 million tons in 1958 to 42 million tons in 1965. In order to obtain the above output in 1959-1965, the following measures are planned: sinking of 26 new shafts of an output capacity of 37.6 million tons, starting operation in 22 new shafts of a capacity of 34.1 million tons, reconstruction of 21 shafts of a capacity of 25.9 million tons, construction of 18 coal washeries of a capacity of

Card 1/8

SOV/68-59-1-16/26

Conference on the Widening of Resources of Coking Coals in the  
Kuznetskiy Basin

50 million tons/year, starting operation during 1959-1965 in 12 coal washeries of a capacity of 33.6 million tons/year. He also gave qualitative characteristics of coking coals from regions under development.

S.A. Sazancv (Gosplan) (RSFSR) read a paper "The Development of the Iron and Steel Industry in the East and Requirements of the Iron and Steel Works for Coking Coals during the Next 7 Years", in which he pointed out the possibility of utilising weakly caking coals which can solve all the difficulties in securing requirements of the industry. He considers that of all the new methods of coal preparation which can be effectively utilised in the near future, the preferential crushing in conjunction with stamp charging is the only one. He considers that by this method about 9 million tons of coke can be produced.

I.V. Gebler communicated on the work carried out in the Tomskiy pol'tekhnicheskii institut (Tomsk Polytechnical Institute) on coking of blends with a high content of Kuznetskiy gas coals with additions of finely crushed coke breeze. It was established that an addition of 5% of coke increases bulk density of blends on average by 5%. With a

Card2/8

SOV/68-59-1-16/26

Conference on the Widening of Resources of Coking Coals in the Kuznetskiy Basin

5% of coke additions up to 60% of gas coals can be incorporated without any decrease in the coke quality. <sup>2</sup> Coke should be crushed to pass screens with 500 mesh/cm<sup>2</sup>. In addition heat requirements for coking are decreased. M.Uy. Grigor'yev (Kemerovo Mining Institute) communicated on possible methods of increasing coking coal resources from the Kuznetskiy Basin. Namely, shortage of coals Zh and K can be replaced by coals G, K<sub>2</sub>, OS and SS without decreasing coke quality by application of some new methods of preparation of blends which are at present under investigation. The most promising method is that of IGI AN SSSR. Other methods are: petrographic beneficiation by preferential crushing and further beneficiation to a sp.g 1.35-1.40; blending of thermally treated coals 30-35% addition of thermally treated gas coals can replace 15-20% of K and Zh coals.

Card3/8

G.N. Makarov (Moskovskiy khimiko-tekhnologicheskii institut im. D.I. Mendeleeva - Moscow Institute of Chemical Technology imeni D.I. Mendeleev) in a paper "The Enlargement of Resources of Coking Coals by Using in Blends Preliminary Heat-treated Gas Coals" reported on trials of charging

SOV/68-59-1-16/26

Conference on the Widening of Resources of Coking Coals in the  
Kuznetskiy Basin

pre-heated blends into ovens (Koks i Khimiya, 1957, Nr 4).  
N.I. Gryaznov (VUKhIN) in a paper "An Increase in the  
Utilisation of Gas Coals by Their Rational Preparation"  
reported on the work of the institute on preferential  
crushing (Koks i Khimiya, 1956, Nr 8, 1957, Nr 4 and  
1958, Nrs 2 and 3). He pointed out that on preferential  
crushing, a large amount of non-caking grains is too  
finely crushed which sharply decreases their caking ability.  
Combination of preferential crushing with stamp charging  
is very promising as the influence of negative factors of  
each method is compensated.

VUKhIN developed a method of utilising coarsely ground gas  
coals in coal blends. If a finely crushed coal blend by  
itself has sufficient caking ability, then coarsely ground  
gas coals can be added without decreasing the quality of  
coke. Additions of coarse grained gas coal decrease the  
proportion of dust in the blend and increase its bulk  
density. An increase in the bulk density can be also  
obtained by drying of coal.

I.I. Amosov (IGI AN SSSR) reported on "Blending of Coals  
For Coking According to Their Petrographic Composition"

Card4/8

SOV/68-59-1-16/26

Conference on the Widening of Resources of Coking Coals in the Kuznetskiy Basin

(Koks i Khimiya, 1957, Nr 12).

I.I. Yurenkov (VNIIUgleobogashcheniye) in a paper "Enlargement of the Resources of Coals for Coking by the Utilisation of Gas and Weakly Caking Coals in Blends" considered that the most efficient method of utilising such coals is preferential crushing. The other methods considered are: the production of ferro-coke (briquettes) and additions of coal-tar pitch, briquetting and subsequent coking.

A.P. Dubrovin (Tsentrorgiproshtakht) in a paper "Perspective of Coal Beneficiation in the Kuznetskiy Basin for the Next 7 Years" reported that the development of coal beneficiation lags behind coal winning. Ash content of coals sent for coking increased by 0.5% in comparison with 1953, and the ash content of coal sent to washeries increased from 11% in 1953 to 31.1% in 1957; correspondingly, the yield of concentrates decreased from 91.1% to 83%. In view of increasing ash content in coals, the yield of concentrates in 1965 will decrease to 78%. A brief outline of planned construction of coal washeries is given (15 new washeries of total output of 23.4 million t/year; in 1966, 43 washeries

Card5/8